Obſervations of the Eclipſe *of the* Sun *on the* 12 *of* Ju-
ly *laſt (new ſtyle) made at the* Obſervatory *at* Pa-
ris 1684. *in the lower apartment, by* Meſſieurs
Caſſini *and* Sedîleau ; *in the upper, By* Meſſieurs
de la Hire *and* Pothenot. *At the* College *of*
Lewis *the* Great, *in the preſence of* Monſeigneur
the Duke of Bourbon, *by* R.P. Fontenay ; *at* Aix *in*
Province ; *at* Lyons ; *at the* Bay *of* Roſes ; *at* Hon-
fleur *and at* Pau ; *by divers other learned Perſons.*

In the lower appartment, by Meſſieurs Caſſini *and* Sedileau.

FOr obſerving this *Eclipſe,* beſide the *Inſtruments* which
were made uſe of for obſerving that of the *Moon,* at
the *Focus* of the *Glaſs* of 40 foot, was placed circle of Paper
equal to the Suns Image, divided into 12 digits, by con-
centrick circles ; and, to another Glaſs of 6 foot, was ap-
plyed, on the *Parallatick* Engine, another circle equal
to that at the *Focus* of the Glaſs of 40 foot.

The Sun, at the beginning of the *Eclipſe,* was clouded ;
ſo that it could not be obſerved : but obſervations were
taken of the following *Phaſes,* ſo as from thence divers o-
thers of the principal *Phaſes* might be collected according
to the meaſures thereof, taken at ſuch times as the Sun was
free. The greateſt obſcuration was ſeen, and the end of
the *Eclipſe,* which was exactly marked. And having ad-
juſted the computation of time for the ſeveral obſerva-
tions, and compared them together ; they were found in
this manner,

The beginning of the Eclipſe.	ho	'	"	Differences
the Eclipſe.	2	25	55	6' 55"
One Digit	2	32	50	
2 Digits	2	40	0	7 10
3 Digits	2	47	40	7 40

4 Digits

4 Digits	2	54	10	6	30
5 Digits	3	2	0	7	50
6 Digits	3	10	5	8	5
7 Digits	3	20	10	10	5
7⅞ Dig. the greatest occultation	3	35		′	″
7	3	55	50		
6	4	4	10	9	20
5	4	12	25	8	15
4	4	19	15	6	50
3	4	25	50	6	35
2	4	32	15	6	25
1	4	37	40	5	25
End	4	43	23.	5	43

The apparent *Diameter* of the *Moon* appeared lefs than that of the *Sun*. It was judged that the Dilatation of the Suns light, might make the Moons Diameter feem lefs. The Horns or Points of the Sun Eclipfed feemed fometimes a little blunted by the Glafs.

In the upper apartment, by *Mefſieurs* de la Hire and Pothenot.

The conclufions following we deduced from a great number of obfervations of the Suns obfcuration, which were meafured very carefully with a Micrometer. The beginning was not immediate'y obferved, by reafon of Clouds; but is concluded from many obfervations made foon after it. Wherefore this obfervation may be reputed as juft as the reft. The Suns greateft obfcuration was obferved very exactly; but the juft time when it happened cannot be determined with the like precifenefs, becaufe there then happened no confiderable alteration for the fpace of near two minutes. The end was obferved with the greateft exactnefs poffible.

The

	h	'	"	Differences '	"
The beginning.	2	25	24		
1 Digit	2	33	2	7	38
2 Digits	2	40	30	7	28
3	2	47	47	7	17
4	2	54	41	6	54
5	3	2	41	8	0
6	3	12	6	9	25
7	3	20	54	8	48
The greatest obscur. } 7 dig. 5'	3	36	27		
7	3	53	34	10	19
6	4	3	53	7	10
5	4	11	3	6	39
4	4	17	42	7	32
3	4	25	14	6	42
2	4	31	56	6	15
1	4	38	11	5	16
End	4	43	27		

There were made also many obfervations of the diftance between the feeming Horns of the Sun, which being compared with the Sun's lightfome part at the fame time, and with the diftances between the lines which joyned the Horns and the Suns fartheft border, the Moons Diameter appear'd then not to be more than about 30 minutes; though by the obfervations of her Diameter made fome days before and after, it was judged to be 31. 30". but the being fomewhat agitated, permitted not to obferve exactly the extremities of the Horns, which appeared fomewhat blunted; on which depended the exactnefs of that determination.

At the College of Lewis the Great, in the prefence of Monfeigneur the Duke of Bourbon, by R. P. Fontenay, Profeffor of the Mathematicks.

At hour 2. 29'. 30". the Sun which had been covered with clouds, being now a little uncovered, the Eclipfe appeared

peared fenfibly begun ; but not yet half a Digit, nor a third part.

	h	'	"
1½ Digit	2	37	40
2	2	40	25
3	2	46	34
4	2	54	30
5	3	3	0
6	3	12	40
7	3	22	18
7¾	3	38,and more.	
7	3	51	20
6	4	2	25
5	4	10	50
3	4	24	31
2	4	29	54
0⅓ fere.	4	41	

The Sun withdrawing behind the Clouds, hindred the obferving of the end.

An Abridgment of diverfe other Obfervations, *fent to* M. Caffini ; *at* Aix *in* Province *by M. the Priour* Gautier.

The beginning at 2*b.* 54'. 30". The end at 5*h.* 9'. 9" The greatnefs of the Eclipfe 8½ Digits. The Height of the Pole 43*d.* 30'.

At Lyons, *in the great* College *of* Jefuits, *by* R. P. Paul Hofte.

	By the Fix'd Stars			By the Sun.		
	h	'	"	h	'	"
1. Digit.	2	45	3	2	50	3
8½ Dig.	3	53	52	3	58	52
1. Digit.	4	59	20	5	4	20
	3	26	14	*The Diameter of Sun and Moon.* 30' 58"		
	4	20	34	*The Diameter of the Sun* 30'. 58.		
				of the Moon 30'. 5.		

The

The time of the greatnefs of the Eclipfe at every of the Digits, was obferved, but is not put into this Abbridgment

At *the Bay* de Rofes, *by M.* Chaffelles.

	h		
The beginning of the Eclipfe	2	40	
The edge of the Moon at the Suns Center	3	25	
The Horns Horizontal	3	40	
The Horns Vertical	4	15	
The End of the Eclipfe	5	1	30'

The greatnefs of the Eclipfe, about $\frac{3}{4}$ of the Suns Diameter. During the Eclipfe, all the world faw Venus without pain. The place is 3 Miles in the Sea, before *Rofes* 42d. 10' Latitude.

At Honfleur, *by M.* de Glos, Profeffor *of* Mathematicks.

	h	'	"
The Beginning, at	2	15	2
The End, at	4	34	35

The Greatnefs ; more than 8 Digits, but lefs than 9.

Other Obfervations communicated by R. P. Fontenay.
At Pau, *by P.* Richaud, *Prof. of* Math. *and* Theol.

At hour $1\frac{3}{4}$. The Eclipfe not begun. At hour $3\frac{1}{4}$, at 10 Digits. The end at $4\frac{3}{4}$. Height of the Pole 43. d. 30.

At Avignon, *by R. P.* Bonfa.

	h	'	"
The Beginning	2	43	27
1. Digit	2	51	58
2. Digits	4	2	
The Horns Vertical	4	24	32
$1\frac{1}{2}$ Dig.	5	1	16
The End	5	4	37

R

The

The Suns Diameter.   3 1   3 8″
The Moons   3 ○   6

 M. *Cassini*, having compared together these Observa-
tions, and made such reductions as the *Parallax* requires,
doth thence take these *Differences* of *Meridians* between
the places of observation.

From *Paris* to *Aix*   14′ to the *East*.
    to *Avignon* 8½
    to *Lyons*   8 or 13
    to *Roses*   4
From *Paris* to *Honfleur* 7 to the *West*.
    to *Pau*   11.

The